



SEQUENCE LISTING

<110> DANIELL, HENRY

<120> PRODUCTION OF PHARMACEUTICAL PROTEINS IN TRANSGENIC PLASTIDS

<130> 1465-PCT-US-00

<140> 09/807,742

<141> 2001-04-18

<150> PCT/US01/06288

<151> 2001-02-28

<160> 19

<170> PatentIn Ver. 2.1

<210> 1

<211> 1250

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> This sequence may encompass 1-250 Gly Val Gly Val Pro repeats

<400> 1

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
1 5 10 15

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
20 25 30

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
35 40 45

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
50 55 60

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
65 70 75 80

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
85 90 95

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
100 105 110

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
115 120 125

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
130 135 140

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro

145	150	155	160
Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly			
	165	170	175
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val			
	180	185	190
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly			
	195	200	205
Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val			
	210	215	220
Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro			
225	230	235	240
Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly			
	245	250	255
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val			
	260	265	270
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly			
	275	280	285
Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val			
	290	295	300
Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro			
305	310	315	320
Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly			
	325	330	335
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val			
	340	345	350
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly			
	355	360	365
Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val			
	370	375	380
Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro			
385	390	395	400
Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly			
	405	410	415
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val			
	420	425	430
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly			
	435	440	445
Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val			
	450	455	460
Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro			
465	470	475	480

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
485 490 495

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
500 505 510

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
515 520 525

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
530 535 540

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
545 550 555 560

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
565 570 575

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
580 585 590

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
595 600 605

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
610 615 620

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
625 630 635 640

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
645 650 655

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
660 665 670

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
675 680 685

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
690 695 700

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
705 710 715 720

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
725 730 735

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
740 745 750

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
755 760 765

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
770 775 780

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
785 790 795 800

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
805 810 815

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
820 825 830

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
835 840 845

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
850 855 860

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
865 870 875 880

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
885 890 895

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
900 905 910

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
915 920 925

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
930 935 940

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
945 950 955 960

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
965 970 975

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
980 985 990

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
995 1000 1005

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
1010 1015 1020

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
1025 1030 1035 1040

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly
1045 1050 1055

Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val
1060 1065 1070

Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly
1075 1080 1085

Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val
1090 1095 1100

Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro
1105 1110 1115 1120

Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly

1125	1130	1135
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val		
1140	1145	1150
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly		
1155	1160	1165
Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val		
1170	1175	1180
Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro		
1185	1190	1195
		1200
Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly		
1205	1210	1215
Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val		
1220	1225	1230
Gly Val Pro Gly Val Gly Val Pro Gly Val Gly Val Pro Gly Val Gly		
1235	1240	1245
Val Pro		
1250		

<210> 2
 <211> 6
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative
 endoplasmic reticulum retention signal

<400> 2
 Ser Glu Lys Asp Glu Leu
 1 5

<210> 3
 <211> 4
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence: Illustrative
 peptide

<400> 3
 Gly Pro Gly Pro
 1

<210> 4
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Primer

<400> 4
ccgtcgacgt agagaagtcg gtatt 25

<210> 5
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 5
gcccattgga aaatcttggt ttattta 27

<210> 6
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 6
cctttaaaaa gccttcatt ttctattt 28

<210> 7
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 7
gccatggtaa aatcttggtt tatta 25

<210> 8
<211> 12
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative
preferred nucleotide sequence

<400> 8
tttcgtttca gt 12

<210> 9
<211> 5
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 9
Ala Val Gly Val Pro
1 5

<210> 10
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 10
Glu Asn Leu Tyr Phe Gln Gly
1 5

<210> 11
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Illustrative peptide

<400> 11
Leu Val Pro Arg Gly Ser
1 5

<210> 12
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: 6-His tag

<400> 12
His His His His His His
1 5

<210> 13
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 13
aaaaccgctc ctcagttcgg attgc

<210> 14
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 14
ccgcgtgtt tcacgaagcc ttacg 25

<210> 15
<211> 119
<212> PRT
<213> Escherichia coli

<400> 15
Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
1 5 10 15

Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile
20 25 30

Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val
35 40 45

Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
50 55 60

Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile
65 70 75 80

Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val
85 90 95

Gly Ile Val Pro Gly Val Gly Ile Val Pro Gly Val Gly Ile Val Pro
100 105 110

Gly Val Gly Val Pro Gly Val
115

<210> 16
<211> 260
<212> DNA
<213> Homo sapiens

<400> 16
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gaacgaggct tctctacac acccaagacc cgccgggagg cagaggacct gcaggtgggg 120
caggtggagc tgggcggggg ccctggtgca ggcagcctgc agccctggc cctggagggg 180
tccctgcaga agcgtggcat tgtggaacaa tgctgtacca gcatctgctc cctctaccag 240
ctggagaact actgaacta 260

<210> 17
<211> 260
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chloroplast
modified proinsulin sequence

<400> 17

ttcgtaaacc aacacttatg tggttctcac ctagtagaag cttataact agtatgtggt 60
gaacgtggtt tctctacac tcctaaaact cgtcgtgaag ctgaagattt acaagtaggt 120
caagtagaat taggtggtgg tcctggtgct ggttctttac aacctttagc tttagaaggt 180
tctttacaaa aacgtggtat ttagaataca tgtgtactt ctattgttc ttataccaa 240
ttagaaaact actgaacta 260

<210> 18

<211> 210

<212> DNA

<213> Homo sapiens

<400> 18

ggaccggaga cgctctgcgg ggctgagctg gtggatgctc ttcagttcgt gtgtggagac 60
aggggctttt atttcaacaa gccacaggg tatggctcca gcagtcggag ggcgcctcag 120
acaggcatcg tggatgagtg ctgctccgg agctgtgac taaggaggct ggagatgat 180
tgcgcacccc tcaagcctgc caagtcagct 210

<210> 19

<211> 210

<212> DNA

<213> Homo sapiens

<400> 19

ggtcctgaaa ctttatgtgg tgctgaatta gtagatgctt tacaattcgt atgtggtgat 60
cgtggtttct atttcaacaa acctactggt tacgggtcct cttctcgtcg tgctcctcaa 120
actggtattg tagatgaatg ttgttccgt tctgtgatt tacgtcgttt agaaatgtac 180
tgtgctcctt taaaacctgc taaatctgct 210